

# IAQ and Floor Coverings



“the beast, the tree, the man ...”  
life it supports.”



“... all things share the same breath –  
the beast, the tree, the man ...  
the air shares its spirit with all the  
life it supports.”

*Chief Sealath, Duwamish*





# IAQ and Floor Coverings

## Who I am...

- Managing Principal of leading architectural school design firm in State of Washington
- Designing schools for over 22 years
  - ☀ Completed 58 school projects
- Recipient of 38 school design awards

## I am not...

- A scientist
- An IAQ expert





# IAQ and Floor Coverings

## Primary Design Goal

➡ To create quality high performance learning environments

☀ The physical environment has a direct and measurable impact on ones:

- ☂ Sense of wellbeing
- ☂ Comfort
- ☂ Sense of security
- ☂ Performance
- ☂ Health



*“A quality environment can enhance learning.”*



# IAQ and Flood Risks

## School Design Considerations:

*Keeping the elements out!*

### Site Design

- ☀ Hard surface walkways to all building entries
- ☀ Transition areas from playfields to buildings

*Keeping the elements out!*



*"Dirt is the enemy."*



# IAQ and Floor Coverings

## School Design Considerations

### ↻ Building Design

☀ Minimize number of exterior entries

☀ Protect entries

☂ Orientation

☂ Covered

☂ Vestibules





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☀ Soil barriers at all entries

☂ Walk-off mats





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  - ☂ Covered

  - ☂ Vestibules

- ☀ Soil barriers at all entries

  - ☂ Walk-off mats

- ☀ Specify eating and drinking areas





# IAQ and Floor Coverings

## Criteria for Selecting Floor Covering

- Initial cost
- Life Cycle Cost
  - ☀ Cost to maintain
  - ☀ Longevity
- Effect on IAQ
  - ☀ Toxicity of material
  - ☀ VOC content → off-gassing
  - ☀ Cleaning products and methods
- Impact on the learning environment
  - ☀ Functional compatibility
  - ☀ Acoustics
  - ☀ Glare
  - ☀ Slip/fall characteristics
  - ☀ Ergonomic comfort
- Client preference



# IAQ and Floor Coverings

Selecting the Right Floor Covering for the Job..

*“the hard and soft sell”*

## HARD SURFACE FLOORING

### Wet/Dirty Areas

- Art and science labs
- Vocational shops
- At sinks





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### High Traffic Areas

- Major corridors





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### Eating/Drinking Areas

- Student commons
- Cafeteria





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**SOFT SURFACE FLOORING**

**General Purpose Classroom**

**Libraries**

**Administrative Spaces**

**Special Instructional Spaces**



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## Hard Surface Flooring Options

- Vinyl Composition Tile (VCT)
- Sheet Vinyl
- Linoleum
- Stained Concrete
- Rubber Tile Flooring
- Terrazzo





# IAQ and Floor Coverings

## Soft Surface Flooring

🔄 High performance carpeting

☀️ All carpets are *not* equal!





# IAQ and Floor Coverings

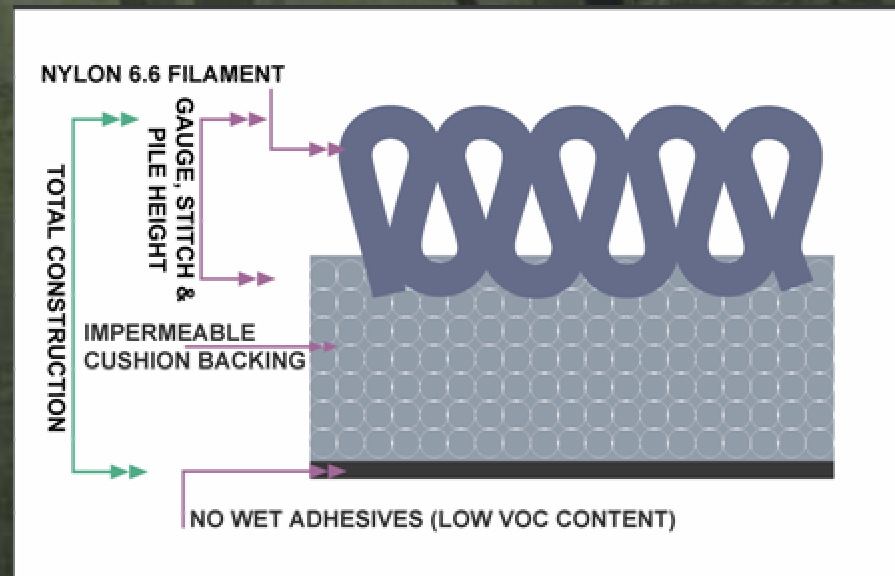
## Characteristics of High Performance Carpets

### ↻ The backing:

- ☀ Impermeable
- ☀ Welded seams
- ☀ Complete moisture barrier

### ↻ The face:

- ☀ Nylon 6.6 fibers
- ☀ Low and dense
- ☀ Minimize “sink”

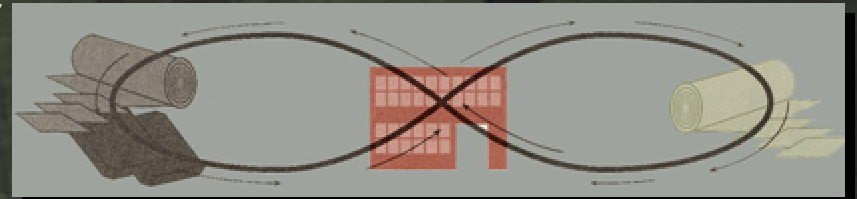




# IAQ and Floor Coverings

## Characteristics of High Performance Carpets

- ♻️ Color and pattern
  - ☀️ Medium value colors
  - ☀️ Random/multi-color patterns
- ♻️ Low or no toxicity
  - ☀️ Low VOC emissions
    - ☂️ Formaldehyde
    - ☂️ 4-PC
  - ☀️ No wet adhesives
- ♻️ Environmentally sustainable
  - ☀️ Recycled content
  - ☀️ Recyclable





# IAQ and Floor Coverings

## Lessons Learned

- ➡ Keep the contaminants OUT!
  - ☀ Capture the “dirt” at entries
- ➡ There is no single floor covering solution
  - ☀ Establish criteria or attributes for selection
  - ☀ Select floor coverings appropriate for the function of each space
  - ☀ Inclusive decision-making
    - 💧 School staff
    - 💧 Maintenance and operation
    - 💧 Community





# IAQ and Floor Coverings

## Lessons Learned

### 🔄 Do your homework

#### ☀️ Use products with proven track records

- ☁️ Not all products are equal
- ☁️ Carpet is not carpet is not carpet

#### ☀️ Write detailed specifications

- ☁️ Performance based
- ☁️ Proprietary





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